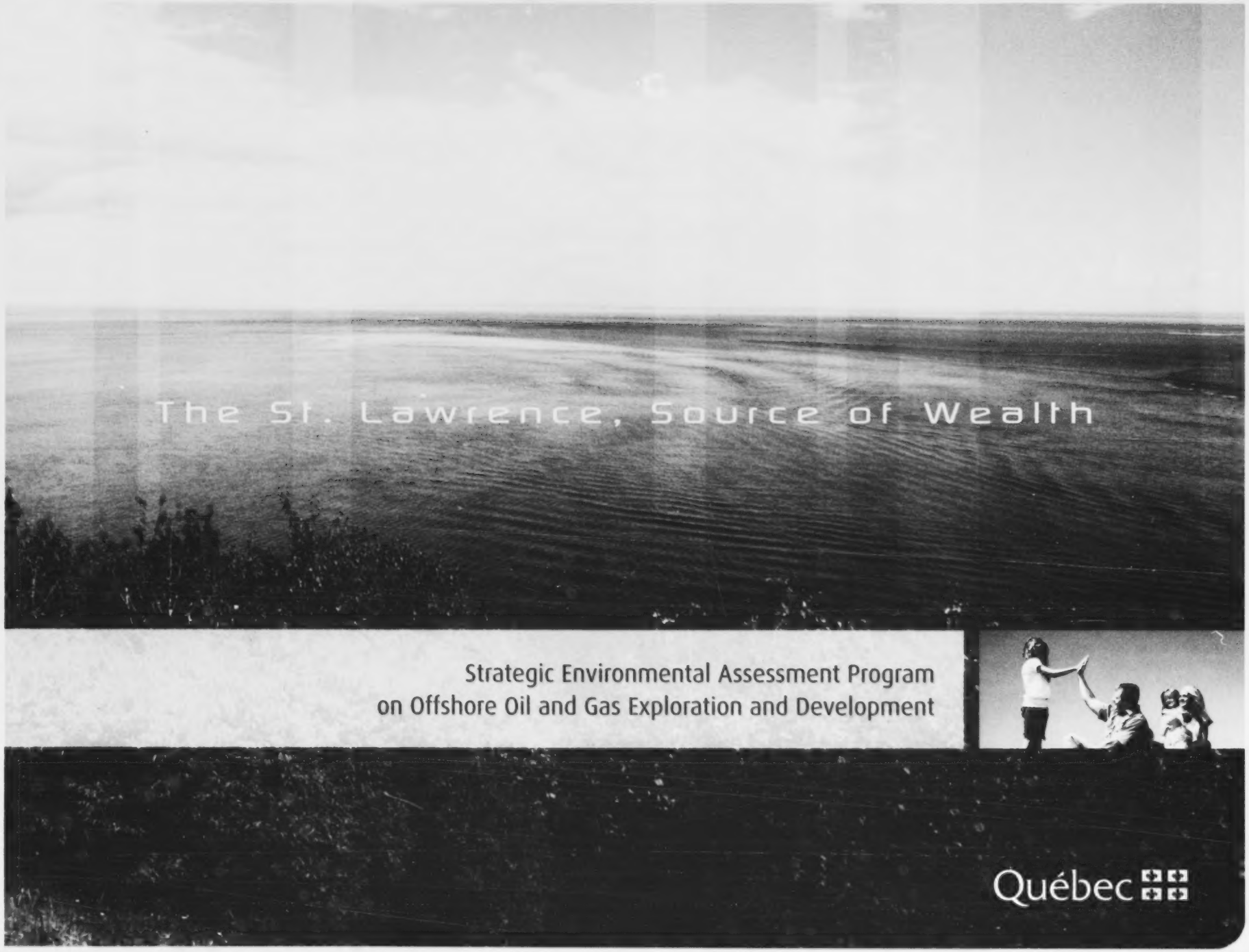
The St. Lawrence, Source of Wealth
Strategic Environmental Assessment Program
on Offshore Oil and Gas Exploration and Development
Québec

www.sea.gouv.qc.ca

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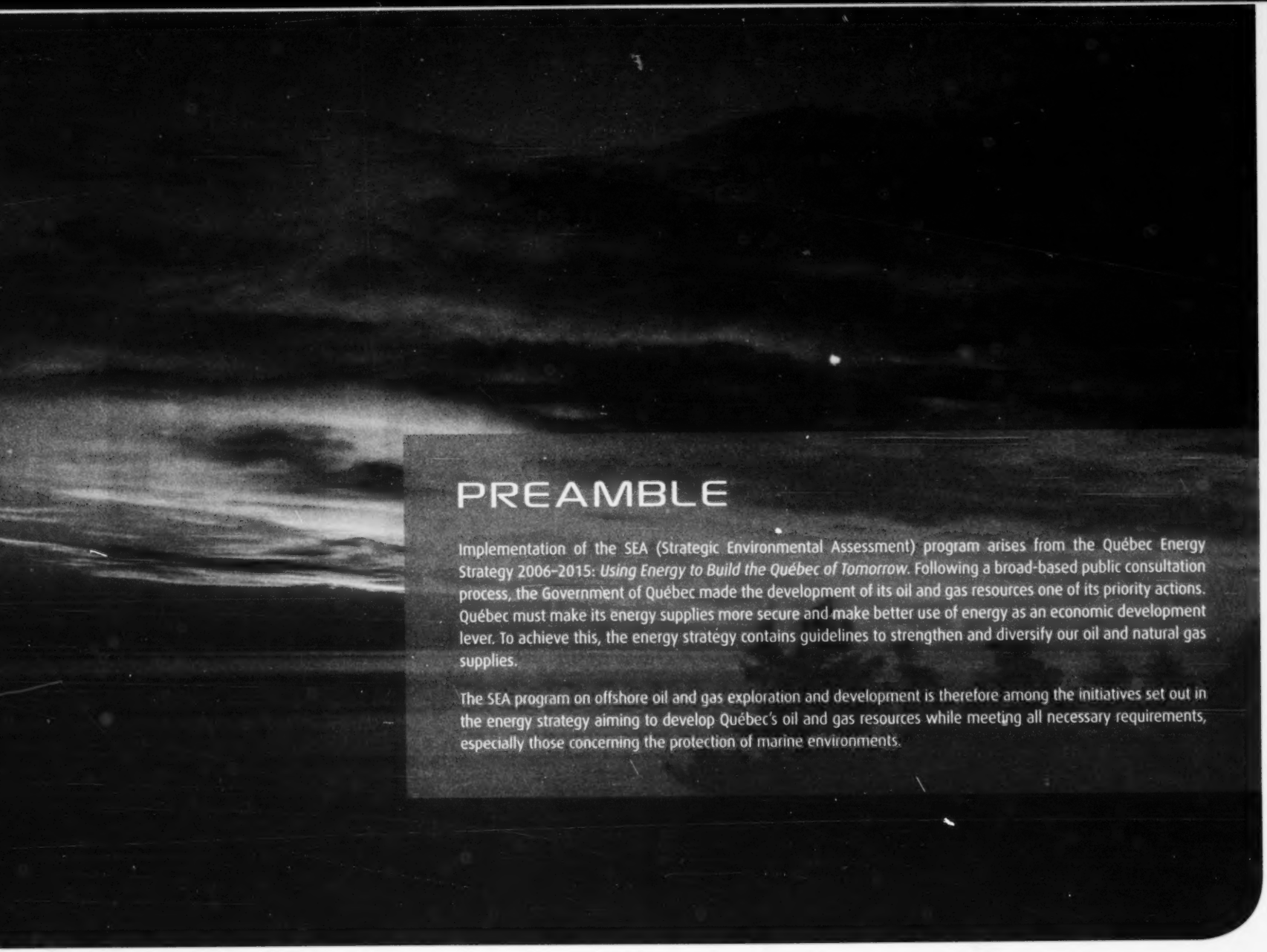


PREAMBLE

Implementation of the SEA (Strategic Environmental Assessment) program arises from the Québec Energy Strategy 2006–2015: *Using Energy to Build the Québec of Tomorrow*. Following a broad-based public consultation process, the Government of Québec made the development of its oil and gas resources one of its priority actions. Québec must make its energy supplies more secure and make better use of energy as an economic development lever. To achieve this, the energy strategy contains guidelines to strengthen and diversify our oil and natural gas supplies.

The SEA program on offshore oil and gas exploration and development is therefore among the initiatives set out in the energy strategy aiming to develop Québec's oil and gas resources while meeting all necessary requirements, especially those concerning the protection of marine environments.

I. OVERVIEW

Nearly 96% of the electricity produced in Québec is clean and renewable, and the province is recognized as a world leader in hydroelectricity. Thanks to impressive hydroelectric facilities, which are in a state of constant development, Québec has a hydroelectric generating capacity of 47,000 MW.

By 2015, this considerable generating capacity will be enhanced by the addition of 4,000 MW derived exclusively from wind energy. Accordingly, Québec is already positioned as a North American wind energy leader thanks to its success in integrating this new energy sector into its energy generation system.

Although Québec is strategically positioned for the coming years in terms of clean and renewable energy, the province's energy balance sheet is still closely linked to its use of hydrocarbons (petroleum and natural gas products).

What is more, global energy security—especially as concerns oil and natural gas supplies—will become an increasingly pressing issue in the next decade due to the anticipated gap between hydrocarbon supply and demand.

1.1 OIL AND GAS CONSUMPTION IN QUÉBEC

Hydrocarbons currently account for nearly 50% of Québec's energy balance sheet. Oil and natural gas accounted for a respective 36.79% and 12.56% of our total energy needs in 2006. However, Québec is not currently a hydrocarbon producer. The bill for oil and gas imports rose from around $12 billion in 2005 and 2006 to $13 billion in 2007.

All crude oil bought by Québec refineries originates outside the province, mainly in Norway, Algeria, eastern Canada, the United Kingdom, Mexico, and Venezuela. In 2005, only 9% of the oil used in Québec came from Canada. The natural gas used in Québec is exclusively from the sedimentary basin of western Canada, and is transported through the TransCanada pipeline network. However, this oil-producing basin appears to be running out of steam.

The facts show just how dependent Québec is with respect to oil and gas supplies and reveal its vulnerability to fluctuations in the global economic and geopolitical situation.

For the Government of Québec, strengthening and diversifying its hydrocarbon supplies is a key issue. Above all, the government aims to ensure that Quebecers have access to crude oil and natural gas at competitive prices and in a socially and environmentally acceptable way.

1.2 DOES QUÉBEC HAVE OIL AND GAS RESOURCES?

The Government of Québec's desire to diversify and consolidate its natural gas supply sources is especially evident in the industrial research being carried out to determine the presence of hydrocarbons on Québec territory. Major oil and gas exploration and development companies recently announced the discovery of major natural gas deposits in the gas shales of the St. Lawrence Lowlands. The production of natural gas in the area could begin in 2010. According to the most recent estimates, total natural gas reserves recoverable from the gas shales would be around 40 trillion cubic feet (TCF).

The many seismic surveys carried out in Québec on land and offshore have led to the discovery of promising indications of natural gas in the St. Lawrence Valley. This discovery has set the stage for the Government of Québec and various partners to carry out research to identify gas in the sediments of the maritime estuary and northwestern Gulf of St. Lawrence.

Exploration work carried out by the Geological Survey of Canada (GSC) in 2003 and 2004 revealed the possible presence of hydrocarbons in the St. Lawrence maritime estuary's quaternary geological formations. The sequence of consolidated (solid rock) and nonconsolidated (loose rock) sediments that forms the maritime estuary and northwestern Gulf of St. Lawrence is conducive to hydrocarbon accumulation.

Promising indicators of natural gas have also been identified in the Baie des Chaleurs basin, in the basin formed by the prolongation of Île d'Anticosti in the Gaspé, and in the basin surrounding Îles de la Madeleine.

1.3 OIL AND GAS DEVELOPMENT IN QUÉBEC

Because there are promising indications of natural gas and petroleum on Québec territory, the Government of Québec has made the development of Québec's oil and gas resources a priority action for the coming years. This commitment is in line with one of the policy guidelines arising from the broad-based public consultations that began in 2004 and led to the drafting of the Québec Energy Strategy 2006–2015.

This approach, backed up by the industrial sector's interest in exploring and developing the Québec seabed, is all the more strategic given that the marine territories in question are near potential markets as well as the St. Lawrence Seaway.

Talks between Ministère des Ressources naturelles et de la Faune (MRNF) and the federal government are underway with regard to the technical and administrative aspects of possible exploration in the Gulf of St. Lawrence. The main objective of these talks is to establish a legislative and regulatory framework to guide oil and gas exploration and development activities and protect the marine environment.

The Government of Québec wishes to responsibly develop its seabed oil and gas reserves. In making decisions, it is imperative that we increase our understanding of Québec's territory and take into account relevant environmental and socioeconomic issues. The government's approach is based on the general notice released by BAPE (Bureau d'audiences publiques sur l'environnement) in its report on issues related to seismic surveys carried out in the gulf and estuary of the St. Lawrence. Accordingly, one of the first steps taken to pursue this approach will be to establish a strategic environmental assessment (SEA) on offshore oil and gas exploration and development. The SEA program goes beyond BAPE recommendations since it concerns both oil and gas exploration and development.

2. STRATEGIC ENVIRONMENTAL ASSESSMENT PROGRAM ON OFFSHORE OIL AND GAS EXPLORATION AND DEVELOPMENT

2.1 WHAT IS A STRATEGIC ENVIRONMENTAL ASSESSMENT?

A strategic environmental assessment (SEA) is a globally recognized tool to promote sustainable development. It can be used to examine the scope and characteristics of the potential environmental effects of a program or policy. It is therefore completed prior to project startup and used to propose prevention and mitigation measures in order to reduce or eliminate the negative effects associated with development and to integrate results into decision making. SEAs take into account the requirements and comments of the public, which is consulted as needed.

SEAs are therefore used to lay the foundation for possible environmental impact assessments (EIAs) on specific development projects, but SEAs are not be confused with EIAs, which are more detailed and concern a more limited area. EIAs are thus carried out at a different scale.

2.2 SEA PROGRAM SET UP BY MINISTÈRE DES RESSOURCES NATURELLES ET DE LA FAUNE

In recent years, concerns have been expressed regarding the potential effects of seismic surveys on aquatic fauna, particularly marine mammals, and the various economic activities on which insular and coastal communities as well as First Nations communities rely.

In light of these concerns, the Strategic Environmental Assessment (SEA) Program on Offshore Oil and Gas Exploration and Development set up by MRNF will allow the drafting of recommendations aimed at harmonizing oil and gas exploration and development with, in particular, commercial fishing, maritime transportation, and tourism related to marine mammal observation and protection. Standardizing the practices applied in Québec and those applied in the Maritime Provinces (where hydrocarbon development is presently being carried out) will also make it possible to draft an environmental assessment procedure that is harmonized between the governments of Québec, the Maritime Provinces, and Canada.

Over the coming years, MRNF will implement a program consisting of four SEAs to assess possible oil and gas exploration and development in marine environments. The program's four SEAs will cover the marine environments of the maritime estuary and northwestern Gulf of St. Lawrence, Baie des Chaleurs, and the northern and southern portions of the Gulf of St. Lawrence. The territories in question are described as basins (see map on page 9).

The SEAs will be carried out in basins that, based on available geological and geoscientific information, are likely to contain hydrocarbons that could possibly be developed in a profitable way.

The following four basins are targeted by the SEA program:

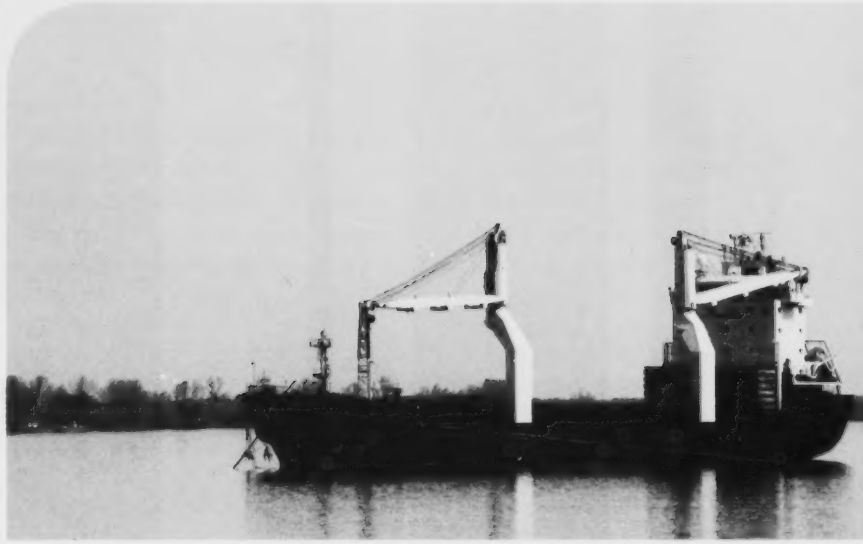
- Maritime estuary and northwestern Gulf of St. Lawrence basin (Zone 1)
- Baie des Chaleurs basin (Zone 2)
- Anticosti basin (Zone 3)
- Magdalen basin (Zone 4).

2.3 FIRST BASIN UNDER STUDY AS PART OF THE SEA PROGRAM

Over the coming months, the SEA program launched by MRNF will first concentrate on the maritime estuary and northwestern Gulf of St. Lawrence basin. This zone is located between the northern and southern shores of the St. Lawrence and covers the marine territory located east of the Parc marin du Saguenay–Saint-Laurent up to the western tip of Île d'Anticosti (see map on page 9). The zone covers a marine environment of nearly 29,000 km^2 within these boundaries.

The St. Lawrence maritime estuary is the subject of a major research project that is part of Geological Survey of Canada's Targeted Geoscience Initiatives. This research project was carried out in the summers of 2003 and 2004 in collaboration with INRS-ETE (Institut national de la recherche scientifique – Eau, Terre et Environnement), Hydro-Québec Oil and Gas, and MRNF. A representative of ISMER (Institut des sciences de la mer de Rimouski) also collaborated in the role of observer. The objective of the project was to acquire geological knowledge of the marine environment and in particular to identify the presence of gas in the sediments.

The geoscientific data collected by the GSC demonstrated that the layer of loosely consolidated rock was much thicker than previously believed—up to approximately one kilometer thick in the Île aux Coudres area. Work carried out revealed the possible presence of natural gas in the maritime estuary's quaternary geological formations. In fact, evidence of natural gas upwelling was gathered between the Rivière Saguenay and Les Méchins. Although the work carried out by GSC and its partners was not intended to identify structures conducive to petroleum accumulation, it still revealed a number of pockmarks resembling chimneys through which small quantities of natural gas escape.



The choice of the maritime estuary and northwestern Gulf of St. Lawrence basin as the site of the first SEA rests on the following three criteria. First, the possible presence of oil and gas in the estuary's quaternary geological formations revealed during exploration work carried out by GSC. Second, the industry's interest in developing the seabed of this maritime territory. Third, the basin's proximity to potential markets and transportation infrastructures.

2.4 SECOND BASIN UNDER STUDY AS PART OF THE SEA PROGRAM

The Magdalen basin covers the southern portion of the Gulf of St. Lawrence between the mouth of Baie des Chaleurs and the interprovincial boundary line of 1964. More specifically, it is delimited to the west by the 64°25'00" meridian of longitude and a portion of the Gaspé Peninsula shore, to the east and south by the interprovincial line of 1964, and to the north by the 48°30'00" parallel of latitude linking the interprovincial line and the shore of the Gaspé Peninsula. This zone covers a marine environment of 36,680 km^2 within these boundaries.

The presence of Carboniferous salt domes sets this basin apart from its neighbors. In this zone, the 340-million-year-old rock formations have been pushed to the surface following an upwelling of salt accumulations, thereby creating huge enclosed structures conducive to hydrocarbon accumulation.

Oil and gas exploration in this sector led to the discovery of the Old Harry geological megastructure approximately 80 kilometers northeast of Îles de la Madeleine. The Old Harry structure alone, with a total surface area of 20,000 hectares (200 square kilometers), could hold recoverable reserves of 4 to 5 billion cubic feet of natural gas or the equivalent in oil, i.e., 1.5 to 2 billion barrels. These reserves could supply Québec with natural gas for around 25 years.

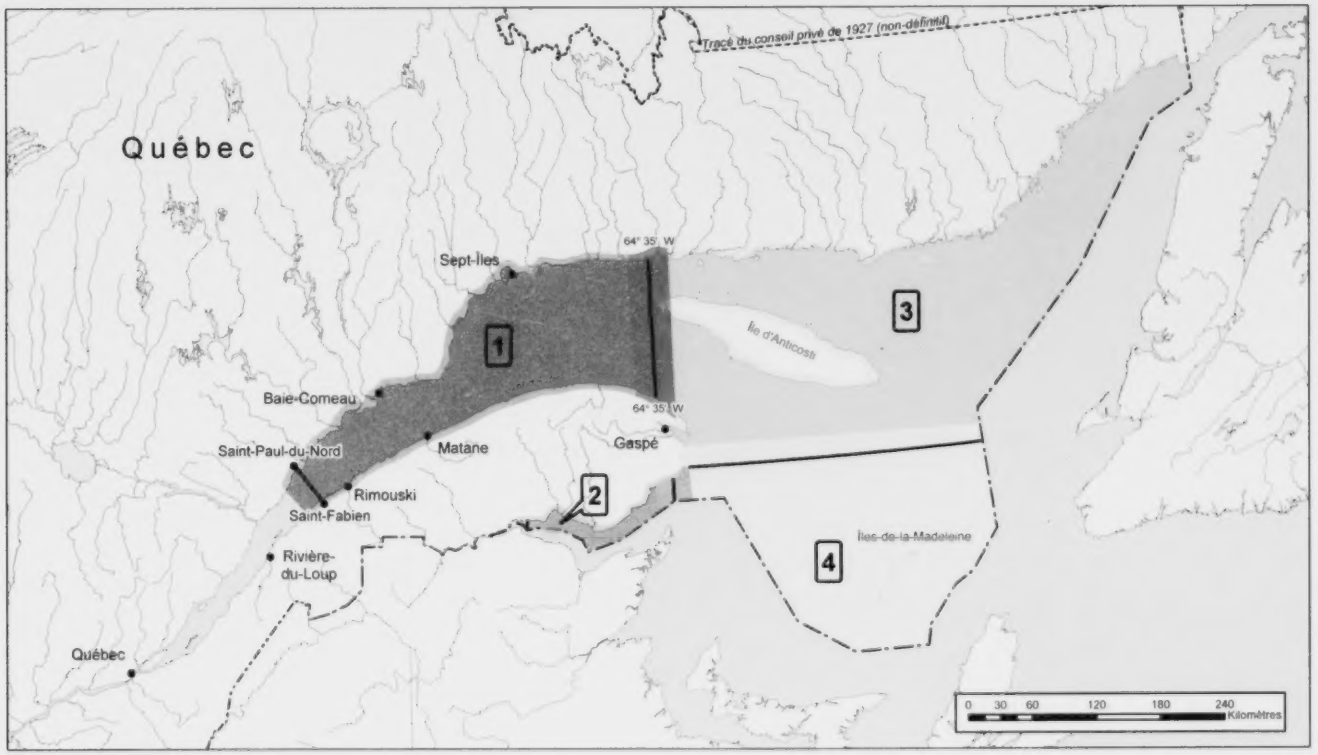
Many similar geologic structures conducive to hydrocarbon accumulation have been located in the St. Lawrence gulf and estuary. The oil and gas potential of these structures has yet to be evaluated. Experts are highly optimistic about the likelihood of finding large quantities of hydrocarbons to develop there.

2.5 THE TWO OTHER BASINS UNDER STUDY AS PART OF THE SEA PROGRAM

As its name indicates, the Baie des Chaleurs basin is located in the Baie des Chaleurs. It is delimited by a line that follows the maritime boundary between Québec and New Brunswick, specifically between the 66°17'45" and 64°25'00" meridians of longitude. This zone covers a marine environment of 2,400 km^2 within these boundaries. This basin is characterized by the presence of Carboniferous rocks. Its geology is not well known.

The Anticosti basin covers the northern portion of the Gulf of St. Lawrence between the western tip of Île d'Anticosti and the interprovincial line of 1964. More specifically, it is delimited to the west by the 64°35'00" meridian of longitude and a portion of the Gaspé Peninsula shore, to the east by the interprovincial line, to the north by the Côte-Nord shore, and to the south by the 48°30'00" parallel of latitude linking the interprovincial line to the Gaspé Peninsula shore. This zone covers a marine environment of 71,100 km^2 within these boundaries. The basin is characterized by Ordovician rocks, i.e., limestone rocks similar to those that led to the discovery of natural gas in southern New York state.

2.6 BASINS UNDER STUDY AS PART OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT



BASINS UNDER STUDY

1 Maritime estuary and northwestern Gulf of St. Lawrence basin

2 Baie des Chaleurs basin

3 Anticosti basin

4 Magdalen basin

— Basin boundary line

3. LAUNCH OF THE FIRST STRATEGIC ENVIRONMENTAL ASSESSMENT

3.1 OBJECTIVE

MRNF's objective is to carry out a SEA on oil and gas exploration and development in the maritime estuary and northwestern Gulf of St. Lawrence basin. This assessment aims to advance our understanding of the biophysical, social, and economic components that characterize this basin with a view to drafting recommendations concerning the conditions for oil and gas exploration and development. The SEA will be the first study of its kind supervised by MRNF. Exploration, which will be addressed in the SEA, is carried out by way of seismic surveys and exploratory drilling, whereas development can be divided into three phases: startup, production, and restoration of the production site to its original state upon expiration of the operating lease.

3.2 MEASURES TO BE TAKEN

Concretely, to carry out the SEA on the maritime estuary and northwestern Gulf of St. Lawrence basin, MRNF will

- Consult with native, coastal, and insular communities as well as with all Québec residents
- Collect, analyze, and take into consideration the concerns expressed by native, coastal, and insular communities during local consultation sessions
- Collect, analyze, and take into consideration the comments and suggestions of participants in the online public consultation
- Gather knowledge and information on the maritime estuary and northwestern Gulf of St. Lawrence basin
- Describe the maritime estuary and northwestern Gulf of St. Lawrence basin, including the coastal and adjoining zones
- Perform an integrated, overall assessment of the environmental, social, and economic effects that might arise from exploration and development
- Ensure the participation of the relevant federal and provincial ministers, and consult and meet with them throughout the SEA process
- Make recommendations adapted to the biophysical and socioeconomic characteristics of the maritime estuary and northwestern Gulf of St. Lawrence with a view to identifying priority prevention and mitigation measures for possible exploration and development
- Determine and demarcate vulnerable sectors of the maritime estuary and northwestern Gulf of St. Lawrence basin according to their biophysical and socioeconomic characteristics
- Take into account the 16 principles of the Sustainable Development Act when developing recommendations
- Describe the environmental, social, and economic effects that might arise from offshore oil and gas exploration and development
- Assess potential cumulative and synergetic effects
- Determine appropriate measures for environmental monitoring and followup

The SEAs will be entrusted to a consultant specializing in environmental assessment and chosen following a public tender.

3.3 PUBLIC CONSULTATIONS

Since public consultation plays a key role in sustainable development, the SEAs will give rise to public consultations consisting of local sessions for the affected native and local communities as well as an online public consultation.

3.3.1 NATIVE COMMUNITY CONSULTATIONS

The Government of Québec intends to hold special consultations for affected native communities wishing to express their concerns about hydrocarbon exploration and development in the maritime estuary and northwestern Gulf of St. Lawrence basin.

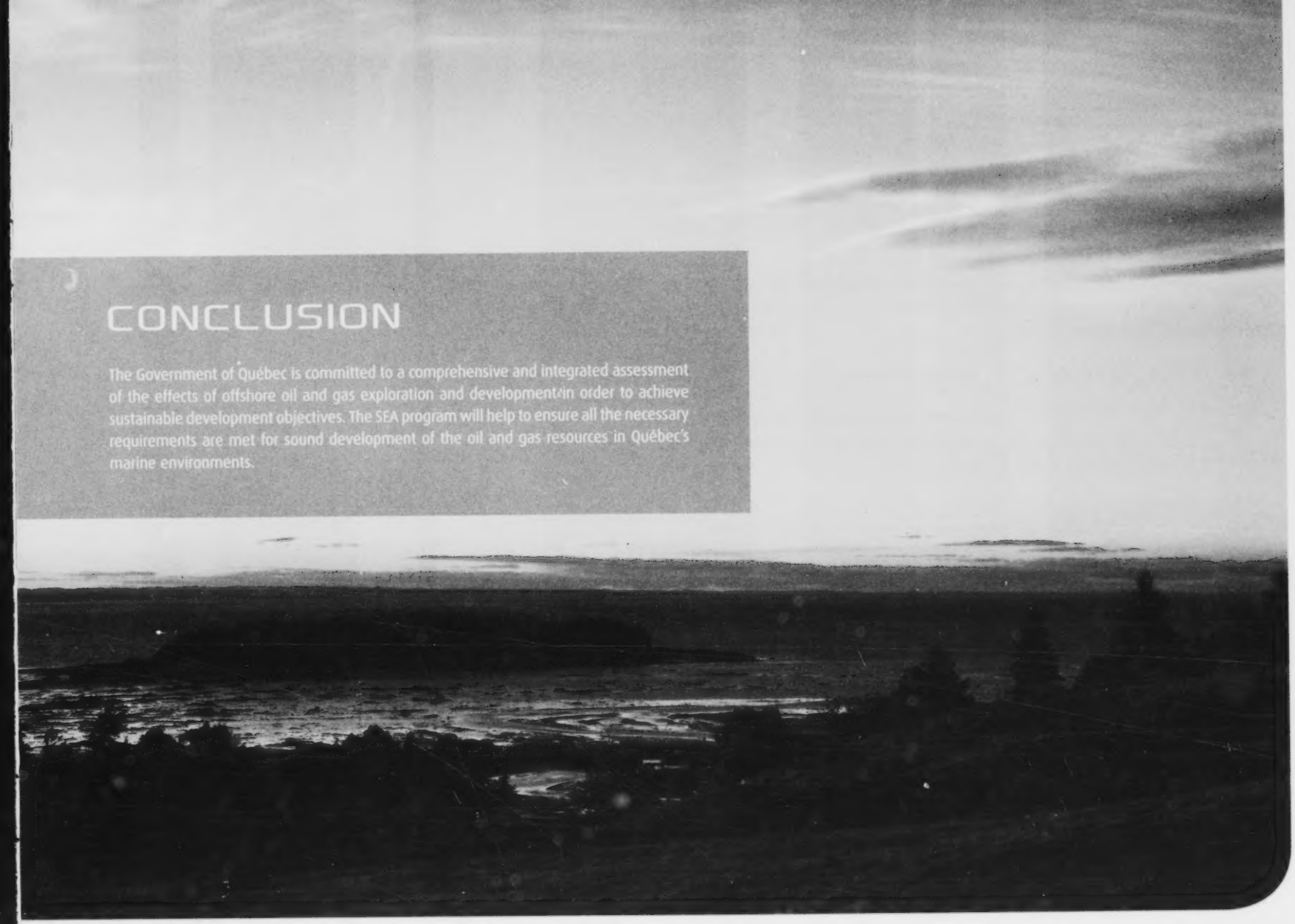
Consultation sessions will be organized and held by MRNF. The consultant tasked with carrying out the SEAs will assist MRNF in these consultations. The recommendations collected during these sessions will be analyzed and then integrated by the consultant into the preliminary SEA report.

3.3.2 CONSULTATION OF COASTAL AND INSULAR COMMUNITIES OF THE MARITIME ESTUARY AND NORTHWESTERN GULF OF ST. LAWRENCE

The concerns of the coastal and insular communities will be collected, analyzed, and integrated into the preliminary SEA report. To this end, the consultant specializing in environmental assessment will organize and hold sessions in certain towns and municipalities adjacent to the study zone. The nature of these consultation sessions, their duration, their number, the invited public representatives, and the choice of towns will be specified at a later time by the consultant.

3.3.3 ONLINE PUBLIC CONSULTATION

All Québec residents will be able to participate in an online public consultation to be held over a four-week period. This online consultation will take place at the same time as the consultations carried out with native and local communities. The recommendations made during the online public consultation will be taken into account during the drafting of the preliminary SEA report.



CONCLUSION

The Government of Québec is committed to a comprehensive and integrated assessment of the effects of offshore oil and gas exploration and development in order to achieve sustainable development objectives. The SEA program will help to ensure all the necessary requirements are met for sound development of the oil and gas resources in Québec's marine environments.

For additional information, visit the Strategic Environmental Assessment Program website at www.sea.gouv.qc.ca

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